

TCM-1000A

SERVICE MANUAL

AEP Model



SPECIFICATIONS

Recording system	2-track 1-channel monaural
Fast winding time	Approx. 2 min. 30 sec. with Sony cassette C-60
Frequency response	100-8,000 Hz
Tape speed	4.8 cm/sec. (1 7/8 ips) $\pm 3\%$ adjustable in playback
Speaker	Approx. 4.5 cm (1 13/16 inches) dia.
Power output (DC)	Speaker: 320 mW (at 10% harmonic distortion)
Input	Microphone input jack (PLUG-IN-POWER) (minijack) sensitivity 0.2 mV for 3 k Ω or lower impedance
Output	Earphones jack (stereo minijack) load impedance 8-300 Ω
Power requirements	3 V DC, two R6 (size AA) batteries DC IN 3 V jack accepts: optional Sony AC-D2M AC power adaptor available in European countries for use on 220 V AC, 50 Hz available in other countries for use on 120 V AC, 60 Hz or 220 V AC, 50 Hz optional Sony DCC-70 car battery cord for use on 12 V car battery

Battery life (hours)

Batteries	Recording
Sony battery SUM-3(NS)	Approx. 3
Sony alkaline battery AM3(N)	Approx. 7

Dimensions Approx. 161.5×31.5×109.7 mm (w/h/d)
(6 3/8×1 1/4×4 3/8 inches)

incl. projecting parts and controls

Weight Approx. 400 g (14 oz) incl. batteries, not
incl. other accessories

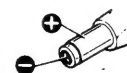
Model Name Using Similar Mechanism	TCM-1000
Tape Transport Mechanism Type	MT-1000-30

FEATURES

- **Pre-end reverse function** reverses the direction of the tape before the tape comes to an end, so recording is not interrupted.
- **TONE switch** cuts out background noise and concentrates on the frequencies of human voice to allow easier listening to conference recordings.
- **Pre-end alarm and pre-end indicator** notify you of the approaching end of the tape.
- **MIC (PLUG IN POWER) jacks** supply power to an optional flat microphone like Sony ECM-K8.
- **Built-in flat microphone**

Note

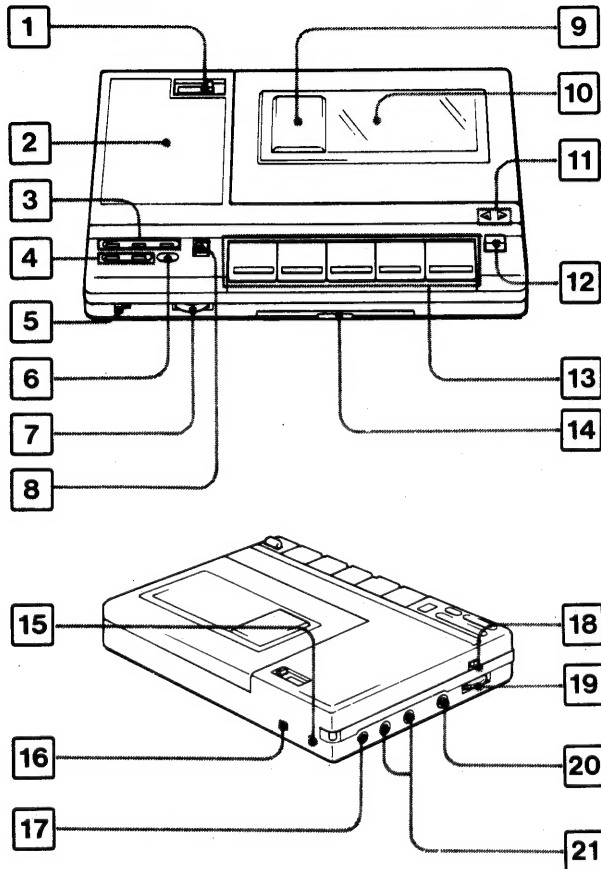
If a car battery cord or AC power adaptor not manufactured by Sony is used, a fuse must be installed in the battery cord, or the AC power adaptor and the polarity of the plug must be as illustrated.



CASSETTE CORDER
SONY®

TC

PARTS IDENTIFICATION



- 1** **TAPE COUNTER and reset button**
Use the counter to index the tape contents. Push the reset button to reset the counter to "000".
- 2** **Speaker**
- 3** **REC/BATT (recording/battery) indicators**
- 4** **PRE-END indicators**
- 5** **TONE (REC/PB) selector**
- 6** **BATT CHECK (battery check) button**
- 7** **VOL (volume) control**
- 8** **PAUSE switch**
To stop the tape momentarily, slide in the direction of the arrow. To restart the tape, slide back to the original position.
- 9** **Flat Mic (built-in microphone)**
- 10** **Cassette compartment**
- 11** **DIRECTION (tape transport direction) indicators**
▶: for playback or recording on the front side
◀: for playback or recording on the reverse side
- 12** **DIRECTION button**
Press to change the tape transport direction.

- 13** **Tape operation buttons**
REC (record) button
PLAY (playback) button
▶▶/◀◀ (fast winding) buttons
STOP button
- 14** **Battery compartment**
- 15** **DC IN 3V (external power input) jack**
Connect an AC power adaptor or car battery cord.
- 16** **ALARM switch**
- 17** **REMOTE jack**
Connect a remote control unit or foot switch.
- 18** **PRE-END REVERSE switch**
Set it to ON for continuous recording of both sides of the tape without interruption.
- 19** **SPEED CONTROL**
Adjust the playback speed. At the center click the playback is at normal speed.
- 20** **🎧 (earphones) jack (stereo minijack)**
- 21** **MIC (PLUG IN POWER) jacks 1,2 (minijack)**

TIPS FOR EASY OPERATION

TO KNOW THE TAPE END IN RECORDING MODE

Set the ALARM switch to ON during recording. The alarm sounds and the indicator begins blinking approximately a few minutes before the end of the tape. If you set the ALARM switch to OFF, the alarm will not sound but the indicator will blink.

Note

If the tab of the reverse side is broken, the pre-end alarm sounds approximately two minutes before the end of the front side.

WHAT IS PRE-END REVERSE FUNCTION?

This function allows the unit to change the tape transport direction a few minutes before the front side of the tape reaches the end. Continuous recording of both sides of the tape can be made without interruption when the PRE-END REVERSE switch is set to ON. When the switch is set to OFF, recording is interrupted at the beginning of the leader tape.

Note

The pre-end reverse function may not work with a cassette with large-diameter hubs, such as a 46-minute cassette.

TO STOP THE TAPE MOMENTARILY

Slide the PAUSE switch to the direction of the arrow.

To restart recording or playback, slide the PAUSE switch to the opposite direction of the arrow.

Notes

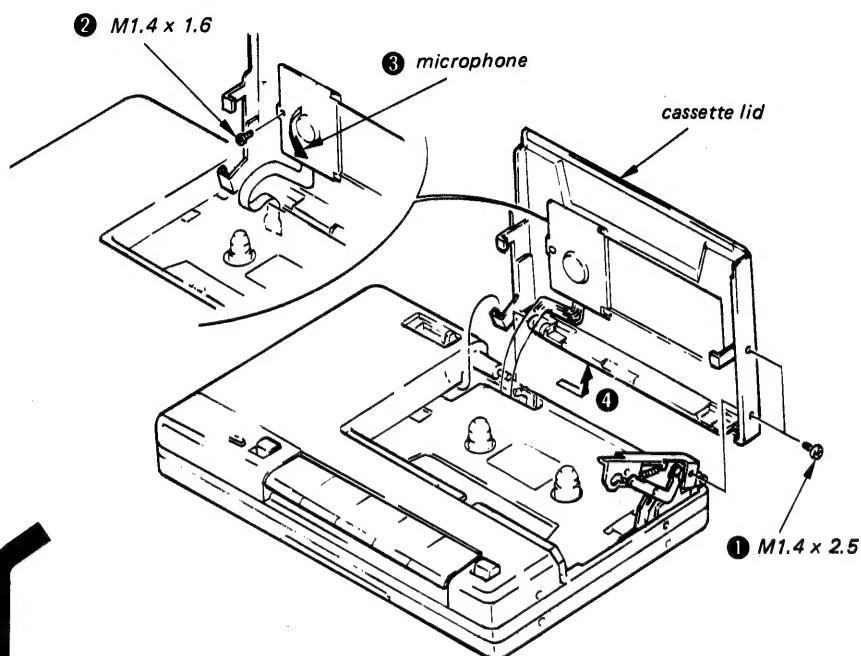
- PAUSE switch is automatically released when the STOP button is pressed.
- Do not press the DIRECTION button while the unit is in the pause mode. If you do, the unit may be damaged.

SECTION 1

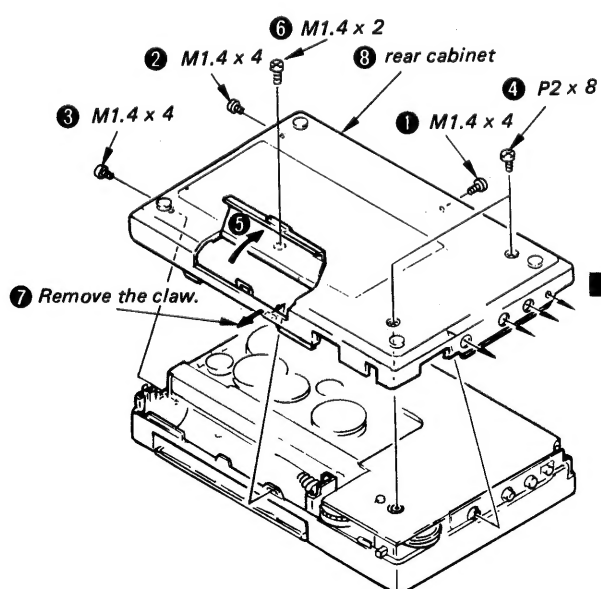
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

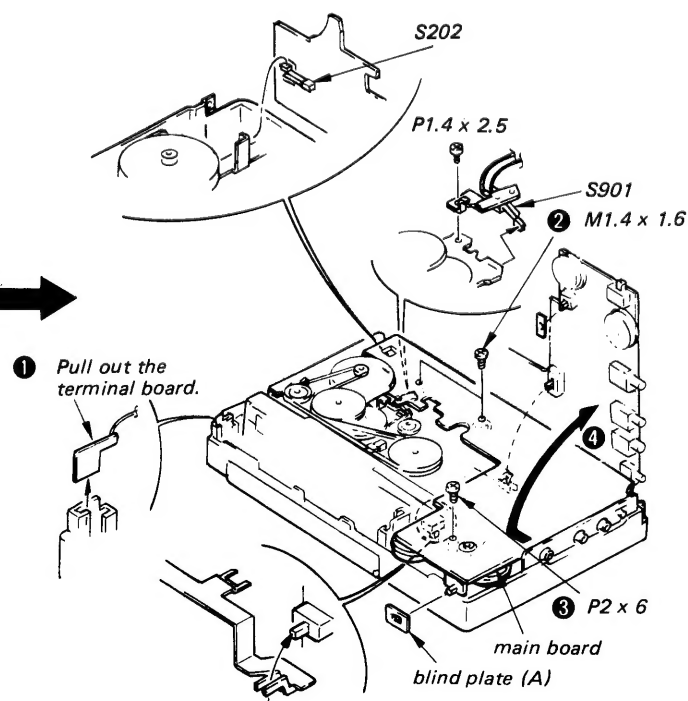
CASSETTE LID REMOVAL



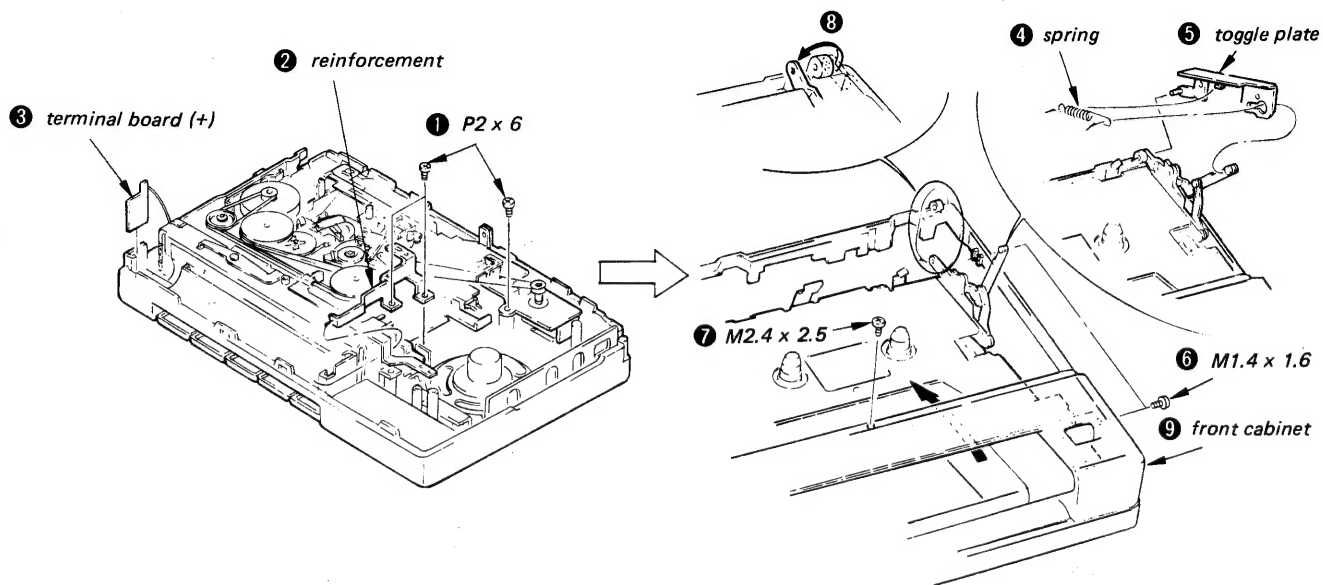
REAR CABINET REMOVAL



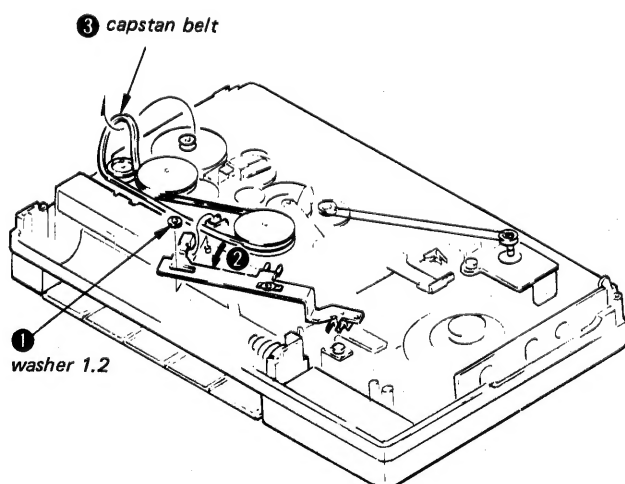
MAIN BOARD



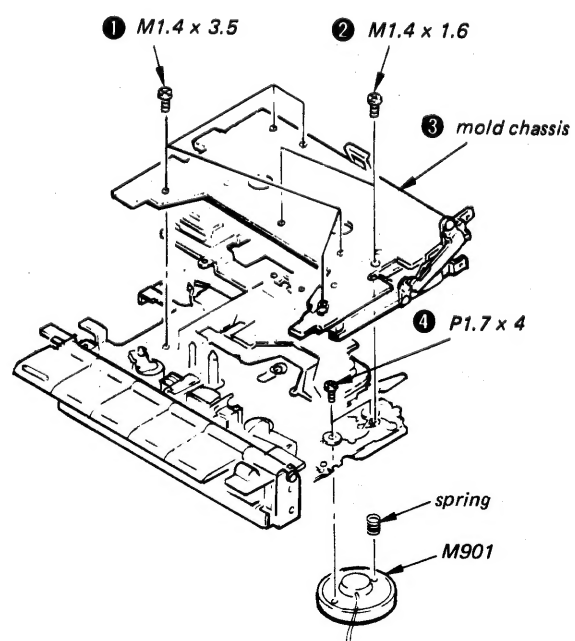
FRONT CABINET



CAPSTAN BELT REMOVAL



MOTOR (M901) REMOVAL



SECTION 2 ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENT

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers
- Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage (2.5 V dc) unless otherwise noted.

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	22 – 48 g·cm (0.29 – 0.64 oz·inch)
REV	CQ-102RB	22 – 48 g·cm (0.29 – 0.64 oz·inch)
FF, REW	CQ-201B	more than 60 g·cm (0.83 oz·inch)
Back Tension	CQ-102C	0.5 – 5 g·cm (0.01 – 0.1 oz·inch)
Tape pulling force	CQ-403A	more than 60 g·cm (0.83 oz·inch)

Test Tape:

Type	Signal	Used for
P-4-A063	6.3 kHz, -10 dB	Azimuth Adjustment
WS-48A	3 kHz, 0 dB	Tape Speed Adjustment

2-2. ELECTRICAL ADJUSTMENTS

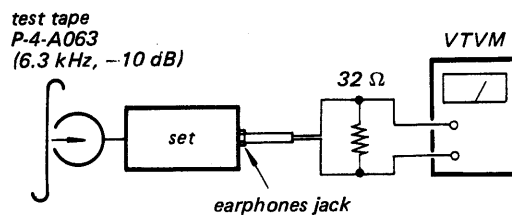
Record/playback Head Azimuth Adjustment

Setting:

VOL control: mechanical mid

Procedure:

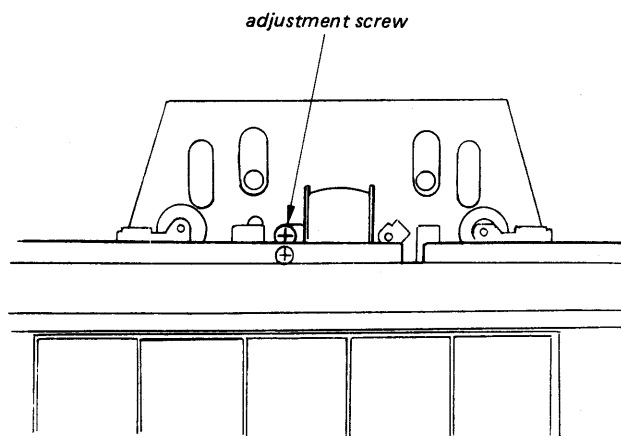
- Mode: forward-playback



- Turn the adjustment screw for maximum VTVM reading.
- Set in the reverse-playback mode and repeat the steps 1 – 2.

Note: Several peaks may appear, but take the maximum.

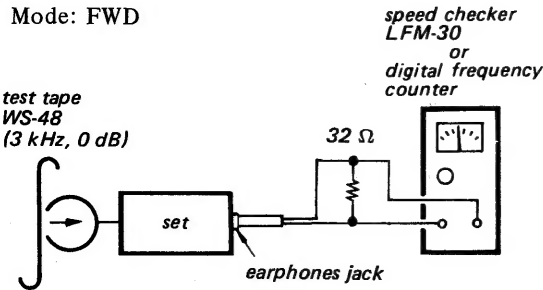
Adjustment Location:



Tape Speed Adjustment

Setting:
Power supply voltage: 2 V dc
VOL control: mechanical mid

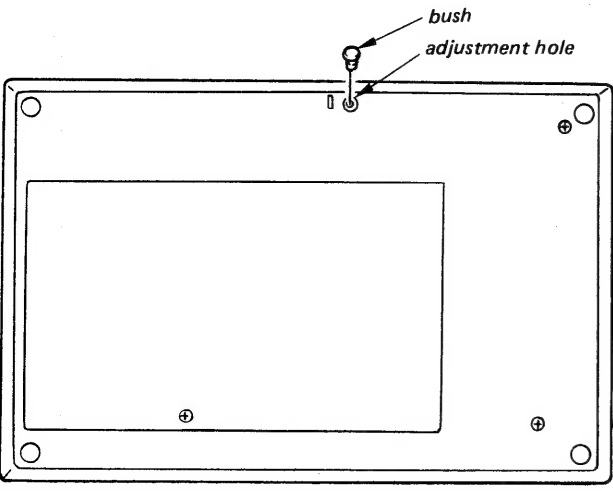
Procedure:
Mode: FWD



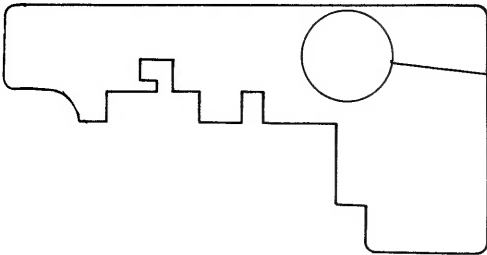
Specification:

Speed checker	Digital frequency counter
3,000 Hz ±1%	2,970 – 3,030 Hz

Adjustment Location:

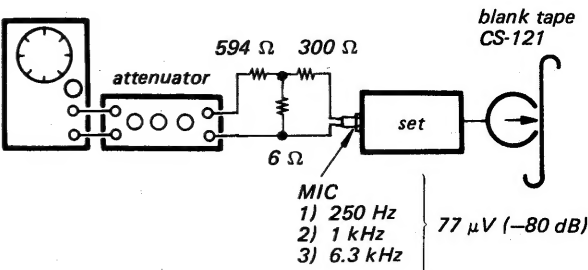


[MAIN BOARD]

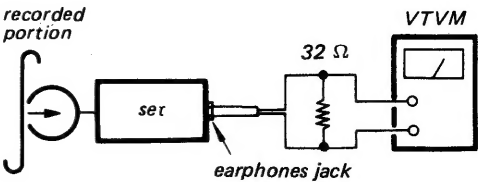


Record Bias Adjustment

Procedure:
1. Mode: record



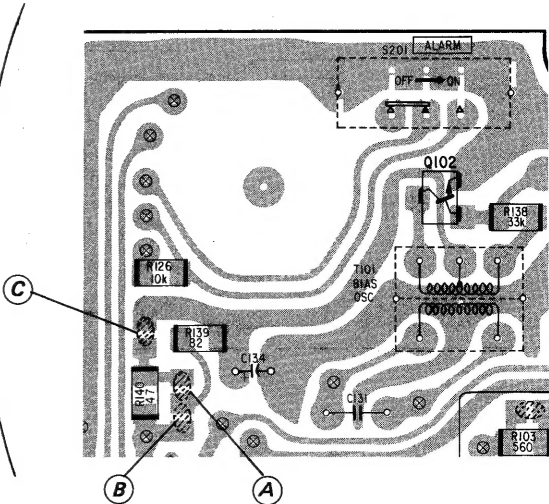
2. Mode: playback



- Adjust the VOLUME control so that 1 kHz output is 77.5 mV (–20 dB).
- Confirm that 250 Hz and 6.3 kHz output is -4 ± 3 dB relative to 1 kHz output.
- If necessary, change the pattern connections and repeat the steps given above.

Pattern connection	VTVM reading (6.3 kHz)
(A) (B) (C) (B) + (C)	high ↑ low

Adjustment Location: main board

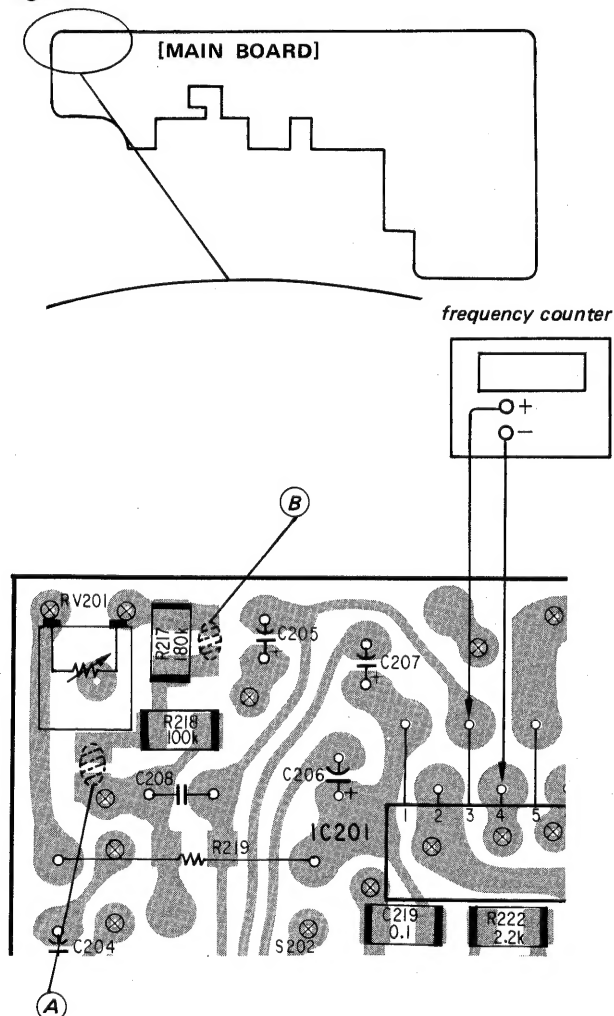


P.E.A (Pre-end alarm) Clock Frequency Adjustment
Setting:

Supply of power voltage: 2 V

Procedure:

1. Connect a frequency counter as shown in the figure.

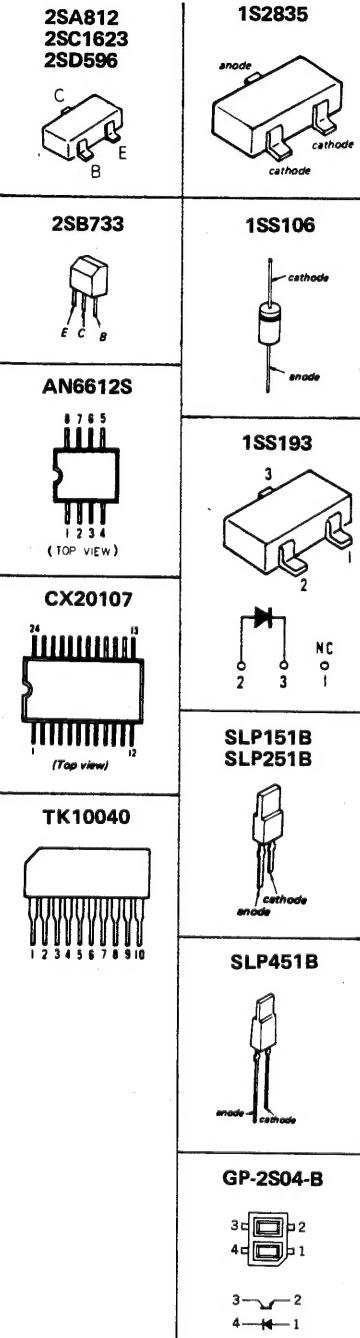


2. Put into the record mode and adjust RV201 so that the reading on the frequency counter at about the end of the tape is 960 – 1,000 Hz.
Standard tape: 60 min. tape (CS-121 or equivalent.)
3. If the adjustment control does not have enough range, change the connections of the patterns (A), (B) and re-do the adjustment.
4. Confirm if the tape automatically reverses the direction at within 2 ± 1 min. from the end of the tape.

SECTION 3
DIAGRAMS

3-1. MOUNTING DIAGRAM
— Conductor Side —

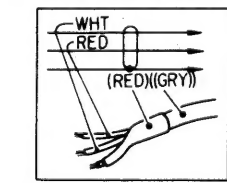
• Semiconductor Lead Layouts



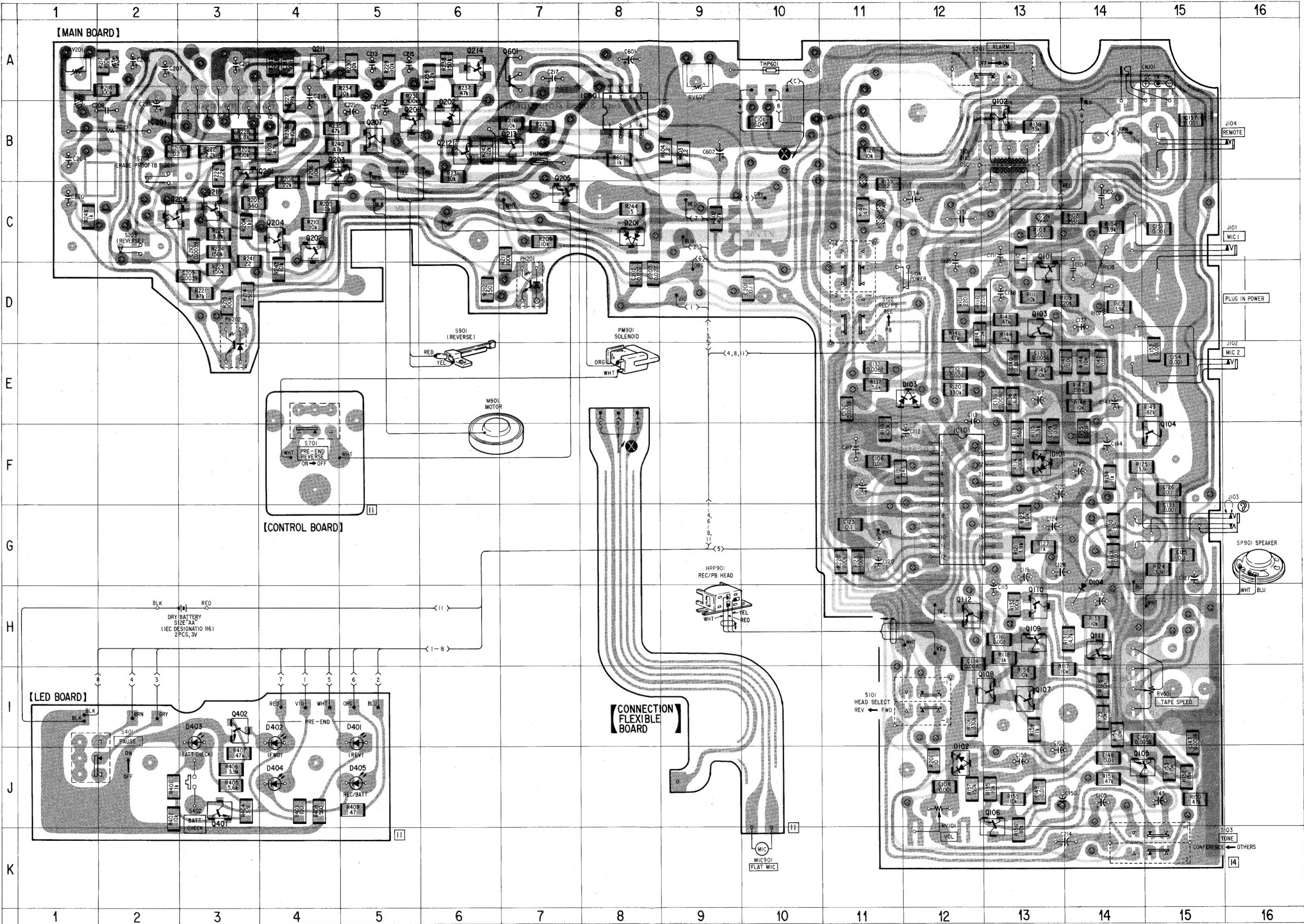
• SEMICONDUCTOR
LOCATION

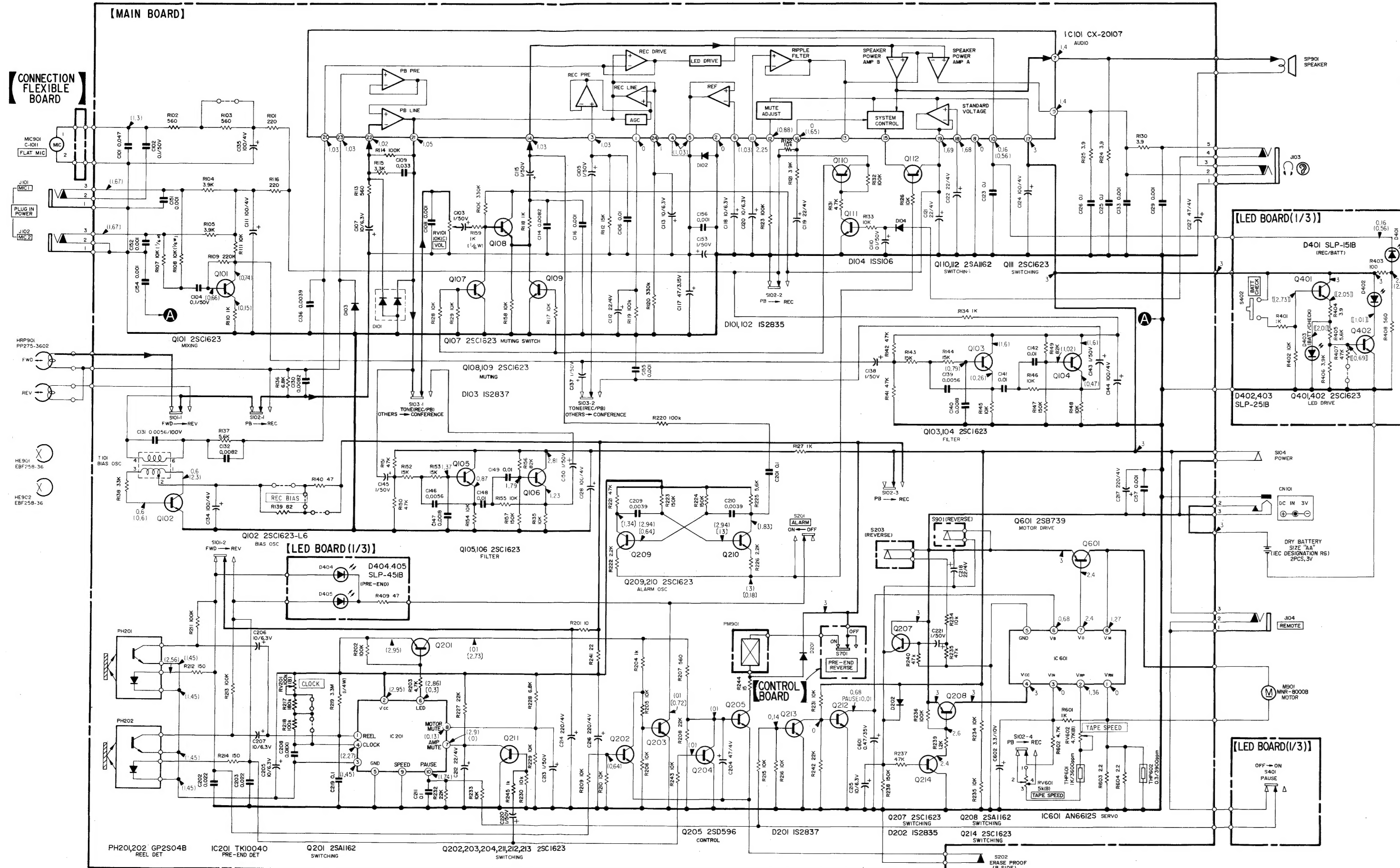
Ref. No.	Location
D101	F-13
D102	G-12
D103	F-12
D201	B-7
D401	J-5
D402	J-4
D403	J-3
D404	J-4
D405	J-5
IC101	G-12
IC201	B-3
IC601	B-8
PH201	D-7
PH202	E-3
Q101	D-13
Q102	B-13
Q103	E-14
Q104	F-15
Q105	J-13
Q106	J-13
Q107	D-10
Q108	C-9
Q201	I-14
Q202	J-14
Q203	B-11
Q204	C-3
Q205	B-4
Q206	B-9
Q207	C-4
Q208	C-4
Q209	C-2
Q210	C-3
Q211	A-4
Q212	B-5
Q213	B-5
Q214	A-6
Q215	C-6
Q216	C-7
Q601	A-7

Note:
• Color code or sleeving over the end of the jacket.



- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : part mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : component-side pattern.





Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : B+ bus.
- : adjustment for repair.
- Power voltage is 3 V DC and fed with regulated dc power supply from DC in 3 V (external power voltage) jack. Voltages are DC with respect to ground in no-signal condition.
- no mark: PLAY mode
- () : B side (with the erase proof claw) REC mode
- () : B side (without the erase proof claw) REC mode
- [] : PRE-END detect mode
- < > : direction mode
- << >> : Plunger operation mode
- [] : BATT. check mode
- Reading are taken under no-signal conditions with a digital volt meter.
- : signal path.
- Switch

Ref. No.	Switch	Position
S101	DIRECTION	FWD
S102	REC/PB	PB
S103	TONE (REC/PB)	OTHERS
S104	POWER	ON
S201	ALARM	OFF
S202	ERASE PROOF (B SIDE)	OFF
S203	REVERSE	OFF
S401	PAUSE	OFF
S402	BATTERY CHECK	—
S701	PRE-END REVERSE	OFF
S901	(REVERSE)	OFF

SECTION 4 EXPLODED VIEWS AND PARTS LIST

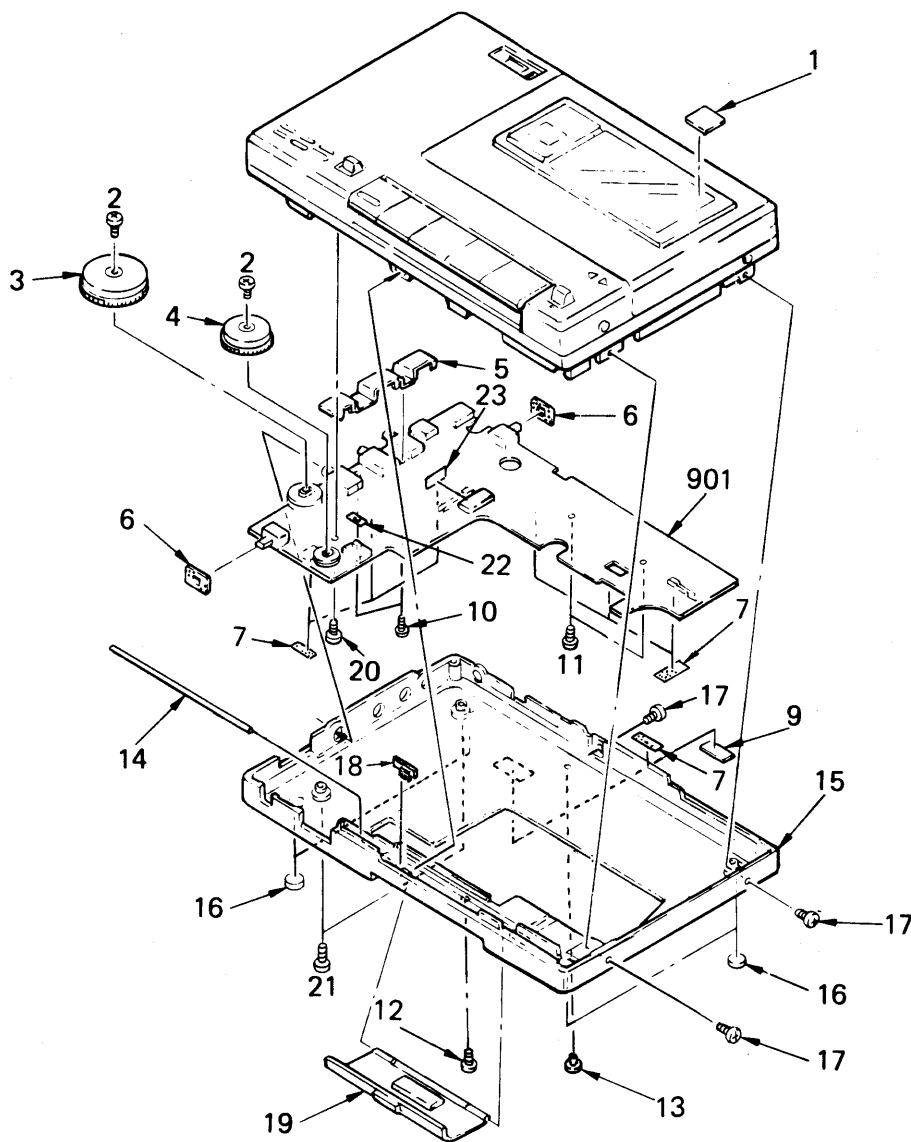
NOTE:

The mechanical parts with no reference number in the exploded views are not supplied.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

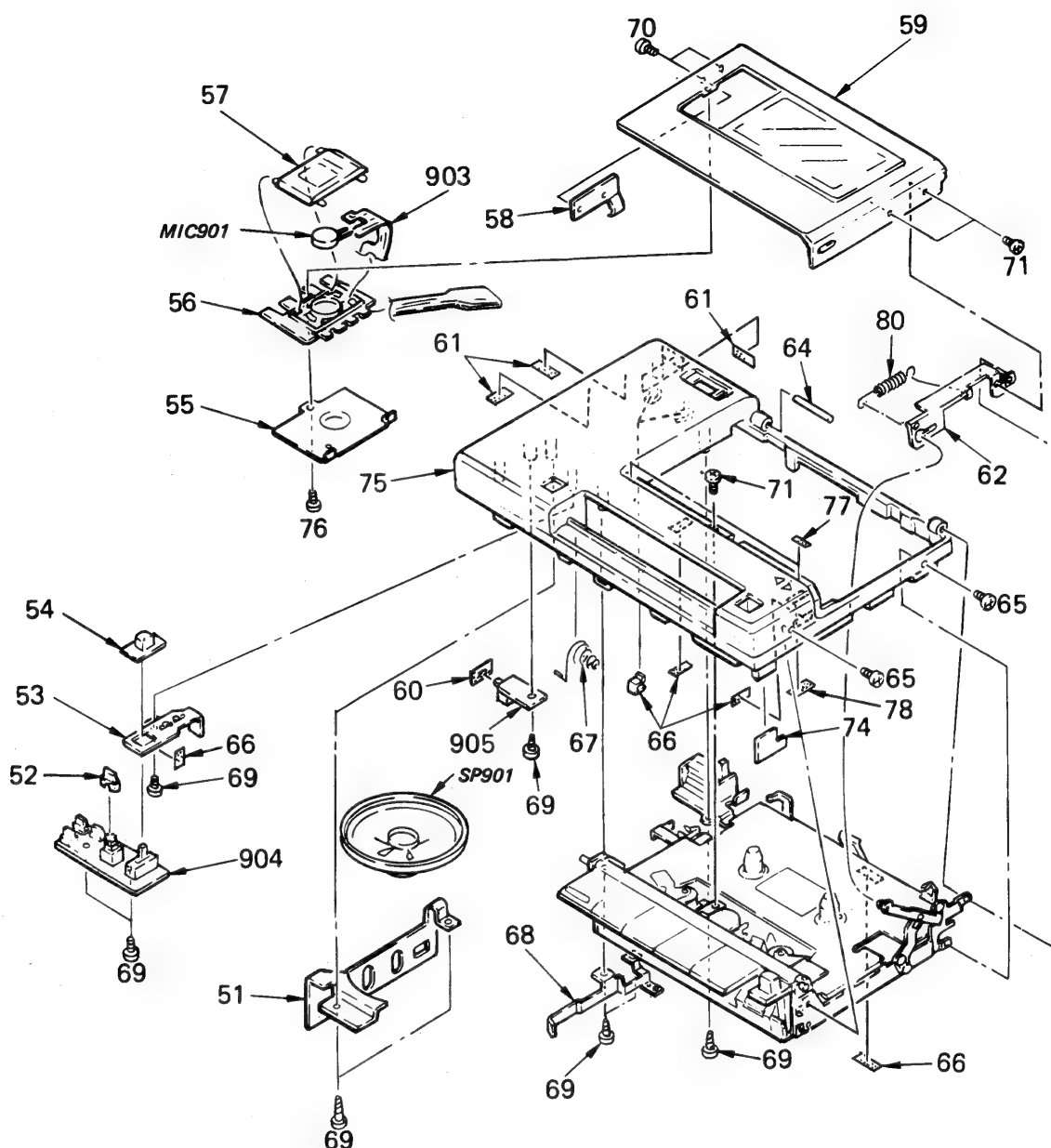
The construction parts of an assembled part are indicated with a collation number in the remark column.

(1)



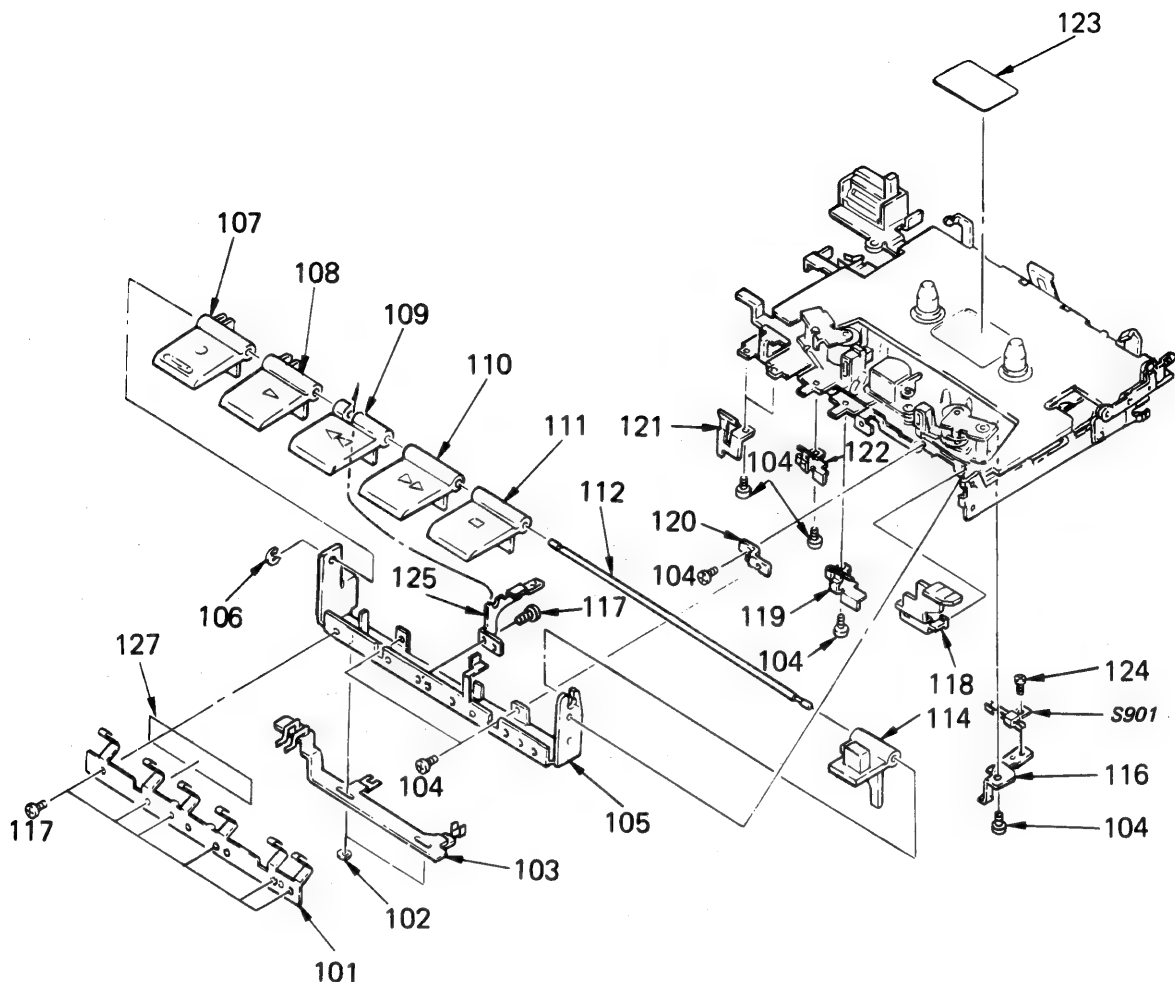
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-703-710-01	STICKER, SONY SYMBOL (12)		13	3-545-657-11	BUSH	
2	3-318-205-01	SCREW (1.7X2.5)		14	3-335-528-01	SHAFT, BATTERY CASE LID	
3	3-335-520-01	KNOB, SPEED CONTROL		15	X-3335-530-1	CABINET ASSY, REAR	
4	3-335-519-01	KNOB, VOLUME		16	3-320-382-01	FOOT, RUBBER	
5	*3-335-590-01	CLAMP, JACK		17	3-703-816-12	SCREW (M1.4X4.0), SPECIAL HEAD	
6	3-305-653-00	PLATE (A), BLIND		18	3-335-597-01	PLATE, LOCK, BATTERY CASE LID	
7	3-831-441-11	CUSHION (B)		19	X-3335-528-1	LID ASSY, BATTERY	
9	*3-701-999-00	LABEL, SERIAL NUMBER		20	7-685-104-19	SCREW +P 2X6 TYPE2 SLIT	
10	3-703-816-01	SCREW (M1.4X2.0), SPECIAL HEAD		21	7-685-105-19	SCREW +P 2X8 TYPE2 SLIT	
11	3-703-816-31	SCREW (M1.4X1.6), SPECIAL HEAD		22	3-570-921-00	SPACER, SWITCH	
12	3-703-502-12	SCREW		23	3-703-929-01	SPACER, SWITCH	
				901	*A-3015-540-A	MAIN BOARD ASSY	

(2)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	*3-335-530-01	REINFORCEMENT, JACK		69	7-685-104-19	SCREW +P 2X6 TYPE2 SLIT	
52	3-335-559-01	BUTTON, CHECK		70	3-317-706-21	SCREW (M1.4X1.4)	
53	*X-3335-508-1	LEVER ASSY, PAUSE RETURN		71	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
54	3-335-518-01	KNOB, PAUSE		74	3-335-539-01	TERMINAL BOARD, (+)	
55	*3-335-529-02	COVER, MICROPHONE		75	X-3335-527-1	CABINET (FRONT) ASSY	
56	*3-335-544-01	CUSHION, MICROPHONE		76	3-703-816-02	SCREW (M1.4X2.0), SPECIAL HEAD	
57	X-3335-502-1	ORNAMENT ASSY, MICROPHONE		77	3-485-330-11	FELT	
58	3-335-547-02	ARM (A), CASSETTE LID		78	9-911-838-XX	CUSHION	
59	X-3335-503-2	LID ASSY, CASSETTE		80	3-337-501-01	SPRING, TENSION	
60	3-337-530-01	BLIND, SWITCH		903	1-619-199-11	PC BOARD, CONNECTION FLEXIBLE	
61	3-831-441-11	CUSHION (B)		904	*1-619-208-11	PC BOARD, LED	
62	X-3335-506-2	PLATE ASSY, TOGGLE		905	*1-622-918-11	PC BOARD, CONTROL	
64	3-335-540-02	SHAFT (LEFT), CASSETTE		MIC901	8-814-184-00	MICROPHONE UNIT (C-1011)	
65	3-703-816-12	SCREW (M1.4X4.0), SPECIAL HEAD		SP901	1-503-322-11	SPEAKER	
66	3-831-441-XX	CUSHION, SPEAKER					
67	3-325-414-01	SPRING					
68	*3-335-593-02	REINFORCEMENT					

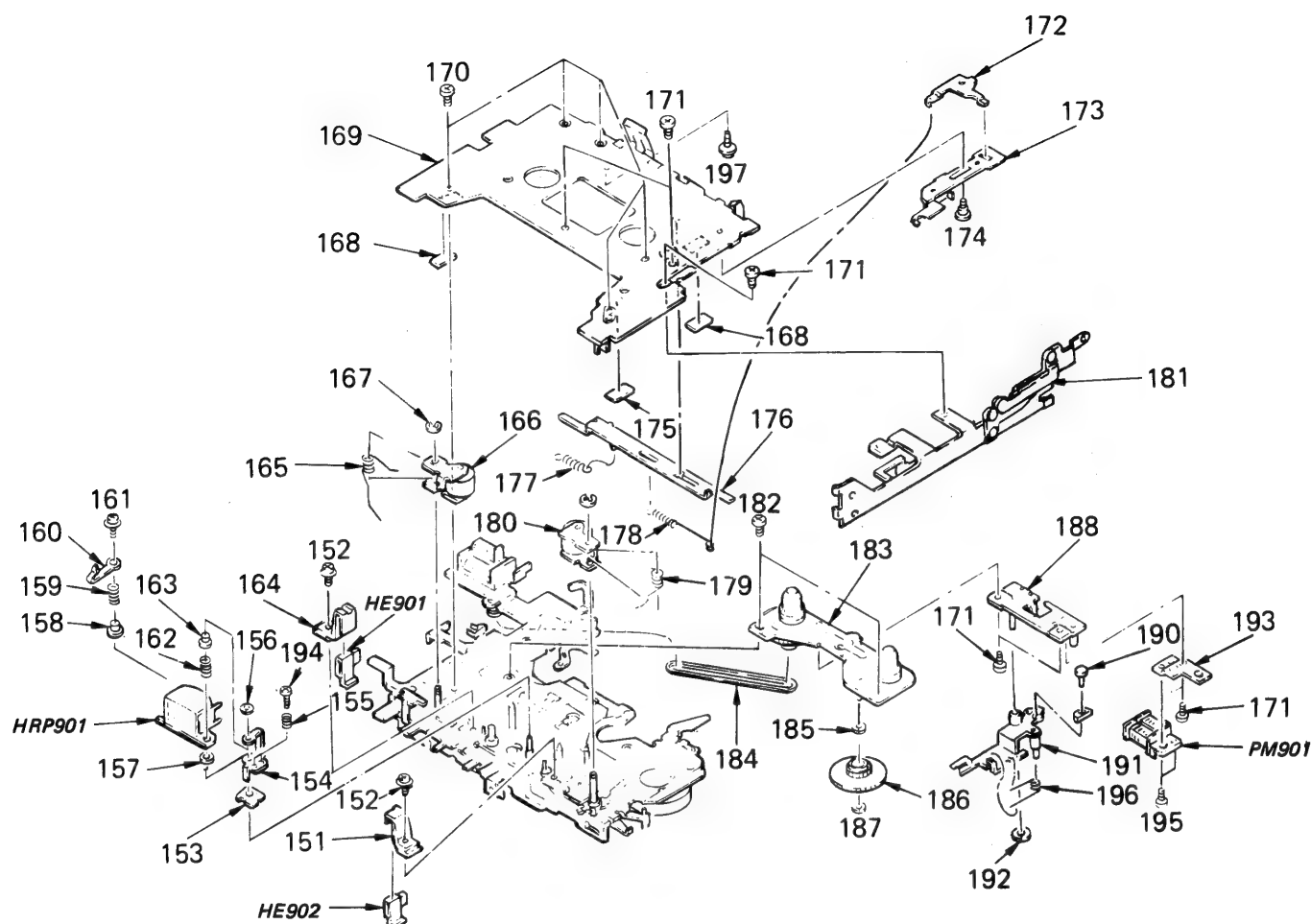
(3)



No.	Part No.	Description	Remarks
101	3-335-512-02	SPRING	
102	3-559-408-11	WASHER, POLYETHYLENE, DIA.1.2	
103	*X-3335-505-1	LEVER ASSY, SELECTION	
104	3-703-816-01	SCREW (M1.4X2.0), SPECIAL HEAD	
105	*X-3335-501-2	CHASSIS ASSY, BUTTON	
106	3-590-768-00	RING (A), E	
107	3-335-501-03	BUTTON, REC	
108	3-335-532-02	BUTTON, FWD	
109	3-335-502-02	BUTTON, REW	
110	3-335-533-02	BUTTON, FF	
111	3-335-503-02	BUTTON, STOP	
112	*3-335-508-01	SHAFT, BUTTON	

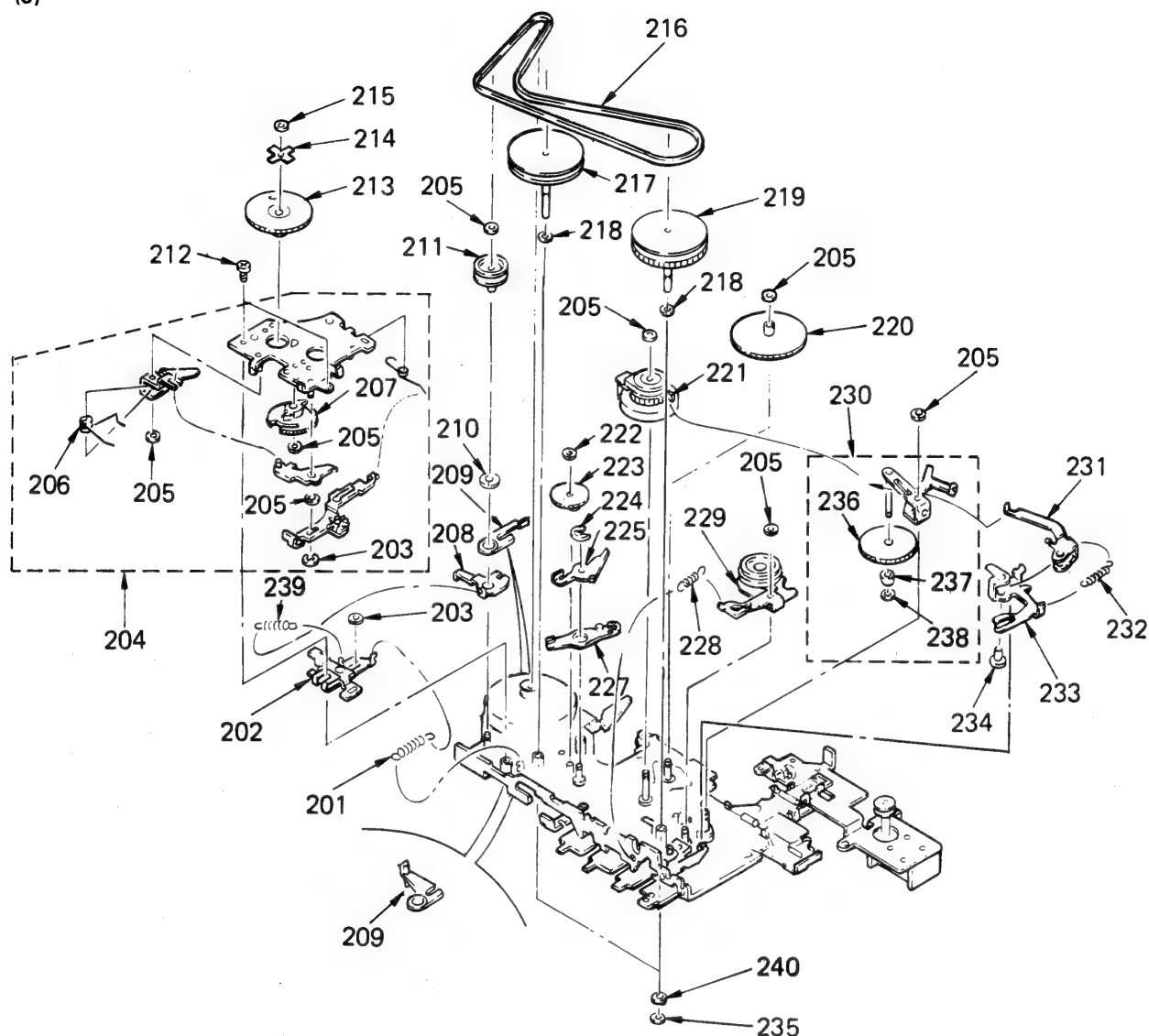
No.	Part No.	Description	Remarks
114	3-335-517-02	BUTTON, DIRECTION	
116	*3-335-537-02	BRACKET (B), SW	
117	3-703-816-31	SCREW (M1.4X1.6), SPECIAL HEAD	
118	*3-335-513-01	PLATE, INDICATION, DIRECTION	
119	*3-335-506-01	BRACKET, FF BUTTON	
120	*3-335-531-01	BRACKET, CHASSIS	
121	*3-335-504-01	BRACKET, REC BUTTON	
122	*3-335-505-01	BRACKET, REW BUTTON	
123	3-556-221-00	PLATE, ORNAMENTAL	
124	4-883-930-00	SCREW, PRECISION +P 1.4X2.5	
125	*3-335-598-01	BRACKET, BUTTON SHAFT	
127	*3-337-531-01	CUSHION	
S901	1-553-226-00	SWITCH, LEAF	

(4)



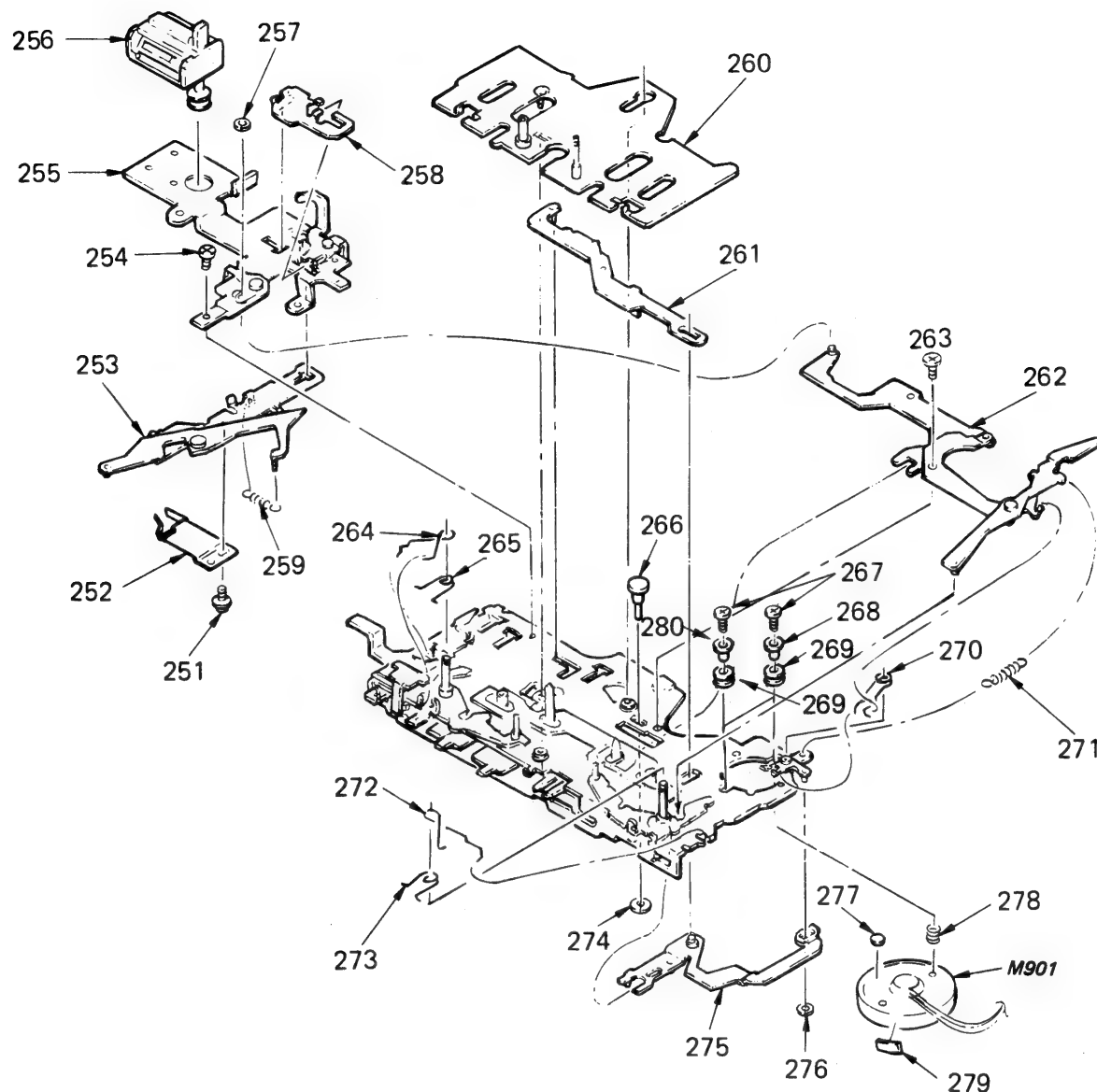
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	3-328-411-01	GUIDE (R), E		176	*3-328-407-01	SLIDER (R), REC PREVENTION	
152	3-703-925-11	SCREW (M1.4X2.8)		177	3-328-472-01	SPRING, TENSION	
153	3-328-386-01	RETAINER, SCREW, ADJUSTMENT		178	3-328-360-01	SPRING, TENSION	
154	3-328-378-01	LEVER, AZIMUTH		179	3-328-368-01	SPRING (RC)	
155	3-302-492-00	SPRING, COMPRESSION		180	X-3328-313-1	PINCH LEVER (R) ASSY	
156	3-578-242-11	WASHER		181	*X-3335-510-2	LEVER ASSY, RETURN	
157	3-315-495-51	WASHER		182	3-703-816-01	SCREW (M1.4X2.0), SPECIAL HEAD	
158	3-325-358-01	COLLAR, AZIMUTH		183	X-3335-514-1	TABLE ASSY, REEL	
159	3-318-106-01	SPRING (H), COMPRESSION		184	3-335-563-01	BELT	
160	*3-335-566-01	CLAMP, HEAD REED		185	3-701-441-01	WASHER	
161	3-703-502-12	SCREW		186	X-3335-518-1	GEAR (B) ASSY, T	
162	3-328-351-01	SPRING, COMPRESSION		187	3-570-615-00	POLY-WASHER (DIA.1.2)	
163	3-328-350-01	SPACER, HEAD SHAFT SPRING		188	*X-3335-511-2	BRACKET ASSY, PM	
164	3-328-410-01	GUIDE (F), E		190	3-335-569-01	PIN, PM	
165	3-328-367-01	SPRING (FC)		191	3-335-580-02	LEVER, PM	
166	X-3328-338-1	PINCH LEVER (F) ASSY		192	3-578-224-00	WASHER	
167	3-590-768-00	RING (A), E		193	*3-335-568-02	SPACER, PM	
168	3-328-483-11	SHEET		194	7-627-551-38	SCREW, PRECISION +P 1.4X5	
169	X-3335-512-2	CHASSIS ASSY, MOLD		195	7-627-850-37	SCREW, PRECISION +P 1.4X1.4	
170	3-703-816-52	SCREW (M1.4X3.5), SPECIAL HEAD		196	3-337-508-01	SPRING	
171	3-703-816-32	SCREW (M1.4X1.6), SPECIAL HEAD		197	3-318-201-11	SCREW (B)(1.4X3), TAPPING	
172	*3-328-359-01	LEVER (R), ERASING PROTECTION		HE901	A-3163-109-A	HOLDER (F) SUB ASSY, E	
173	*3-335-565-01	SLIDER (R), ERASING PROTECTION		HE902	A-3163-108-A	HOLDER (R) SUB ASSY, E	
174	3-328-474-01	SHAFT, SLIDER (R)		HRP901	1-543-383-11	HEAD, MAGNETIC (REC/PB)	
175	3-328-483-21	SHEET		PM901	1-454-431-21	SOLENOID, PLUNGER	

(5)



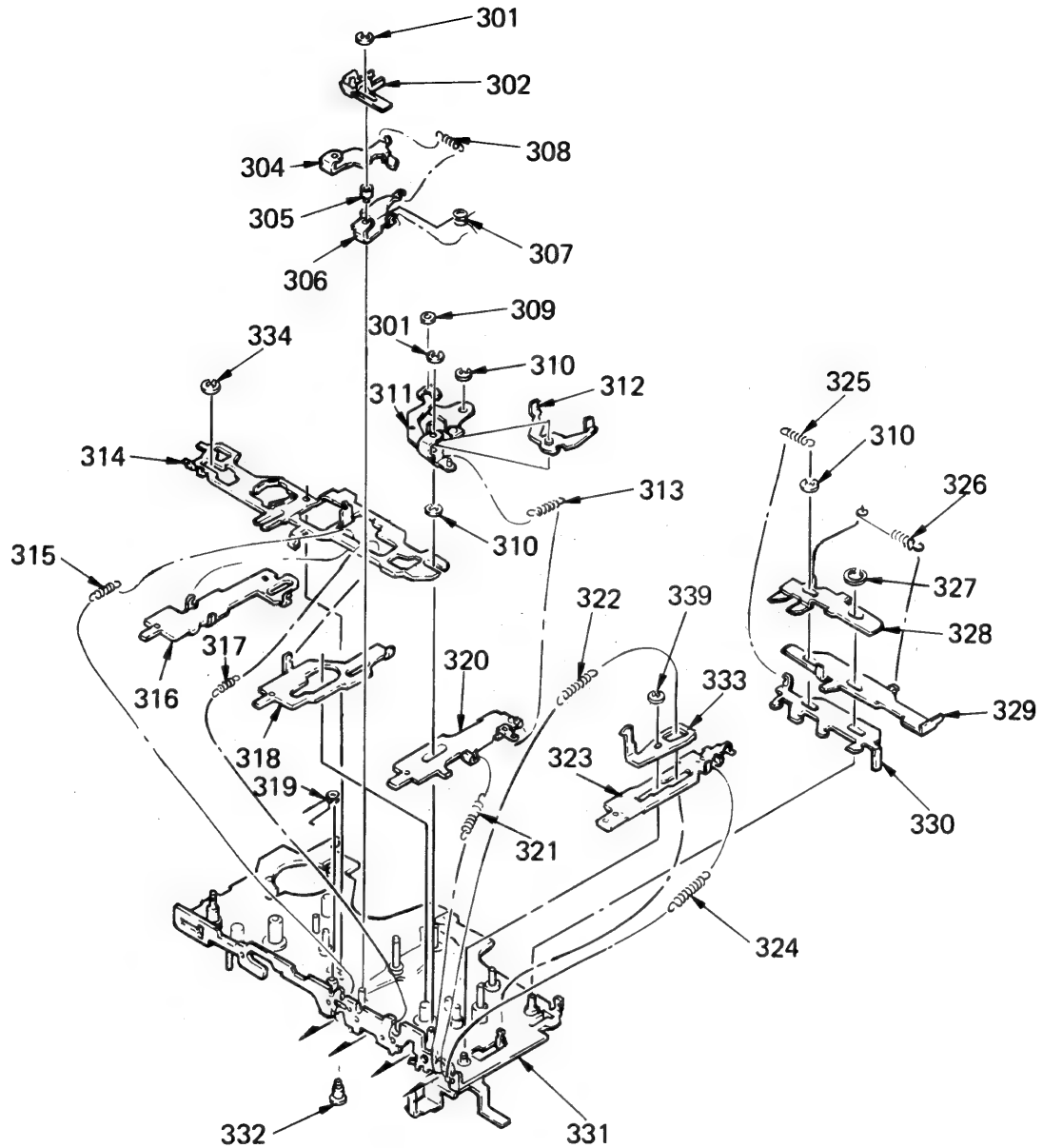
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-328-439-01	SPRING, TENSION		222	3-325-394-01	WASHER, STOPPER	
202	*X-3328-333-1	SLIDER ASSY, RETURN		223	3-325-323-01	GEAR, CAM	
203	3-327-710-01	RING, RETAINING		224	3-325-386-01	RING (A), C	
204	*A-3039-289-A	PC BOARD COMPLETE ASSY, D	203,206,207	225	3-339-101-01	LEVER, SHUT-OFF	
205	3-570-615-00	POLY-WASHER (DIA.1.2)					
206	3-328-352-01	SPRING		227	3-325-326-01	LEVER (B), SHUT-OFF	
207	3-325-363-01	GEAR, D		228	3-570-552-00	SPRING, TENSION	
208	3-328-395-01	LEVER (A), FWD RETURN		229	X-3335-728-1	IDLER COMPLETE ASSY (A), FWD	
209	3-328-396-01	LEVER, RETURN SW		230	*X-3328-325-1	LEVER ASSY, FR GEAR	
210	3-328-432-01	WASHER, STOPPER		231	3-328-448-01	LEVER (B), CENTER RETURN	
211	3-324-945-01	PULLEY, MIDWAY		232	3-328-438-01	SPRING, TENSION	
212	3-703-816-01	SCREW (M1.4X2.0), SPECIAL HEAD		233	3-328-435-01	LEVER, PREVENTION, SHUT-OFF	
214	3-328-447-01	SPRING		234	3-328-344-01	COLLAR, PREVENTION, S	
213	3-328-460-01	GEAR, SHUT OFF		235	3-321-483-01	RING, RETAINING	
215	3-578-242-11	WASHER			3-321-483-11	RING, RETAINING	
216	3-325-387-01	BELT					
217	X-3325-206-1	FLYWHEEL (F) ASSY		236	3-324-947-01	GEAR, FR	
218	3-321-489-01	WASHER		237	3-327-711-01	COLLAR (FR)	
219	X-3325-213-1	FLYWHEEL (R) ASSY		238	3-318-136-01	WASHER, POLYETHYLENE, DIA. 1.2	
220	3-325-324-01	GEAR, IDLER		239	3-328-471-01	SPRING, TENSION	
221	X-3324-921-5	LIMITER ASSY, FWD		240	3-578-254-00	RING, RETAINING, E1.2	

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No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
251	3-703-502-12	SCREW		267	7-627-552-48	SCREW, PRECISION +P 1.7X4	
252	*3-335-564-01	SPRING		268	3-325-385-01	SPACER, MOTOR	
253	*X-3328-330-1	LEVER (B) ASSY, REC		269	3-570-770-00	CUSHION (A), MOTOR	
254	3-703-816-02	SCREW (M1.4X2.0), SPECIAL HEAD		270	3-328-358-01	SPRING	
255	*X-3335-515-2	BRACKET ASSY, COUNTER		271	3-547-668-00	SPRING, TENSION	
256	1-548-558-61	TIMER, TAPE		272	3-328-394-01	SPRING (R)	
257	3-570-615-00	POLY-WASHER (DIA.1.2)		273	3-328-371-01	SPRING (R)	
258	3-328-364-01	SLIDER (F), REC PREVENTION		274	3-578-224-00	WASHER	
259	3-561-626-00	SPRING, TENSION		275	*X-3328-328-1	LEVER ASSY, MODE SELECTION	
260	X-3328-316-1	CHASSIS ASSY, HEAD		276	3-578-242-21	WASHER	
261	*X-3328-342-1	SLIDER ASSY, SHUT-OFF		277	3-570-937-00	CUSHION (C), MOTOR	
262	*X-3328-318-1	LEVER (C) ASSY, REC		278	3-337-502-01	SPRING, COMPRESSION	
263	3-328-436-01	SHAFT, LEVER (C), REC		279	3-831-441-XX	SPACER	
264	3-328-403-01	SPRING (F)		280	*3-337-524-01	CUSHION, MOTOR	
265	3-328-372-01	SPRING (F)		M901	1-541-417-11	MOTOR	
266	3-328-402-01	SHAFT (B), SLIDE					

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No.	Part No.	Description	Remarks
301	3-578-254-00	RING, RETAINING, E1.2	
302	3-328-454-01	SPRING	
304	3-325-265-01	LEVER (C), IDLER	
305	3-325-263-01	COLLAR (B), IDLER	
306	*3-328-433-01	LEVER (D), IDLER	
307	3-328-473-01	SPRING	
309	3-570-615-00	POLY-WASHER (DIA.1.2)	
310	3-590-768-00	RING (A), E	
311	*X-3328-308-1	LEVER (D) ASSY, H	
312	3-328-341-01	LEVER (A), RETURN, CENTER	
313	3-328-345-01	SPRING, TENSION	
314	*X-3328-312-1	SLIDER ASSY, D	
315	3-328-486-01	SPRING, TENSION	
316	*3-325-365-21	LEVER, FF	
317	3-325-345-01	SPRING, TENSION (POWER TENSION)	
318	*3-325-325-21	LEVER, REW	

No.	Part No.	Description	Remarks
319	3-337-525-01	SPRING	
320	*3-328-449-11	LEVER (C), FWD	
321	3-328-354-01	SPRING, TENSION	
322	3-325-347-01	SPRING, TENSION	
323	3-328-408-11	LEVER, REC	
324	3-308-704-00	SPRING, TENSION	
325	3-570-552-00	SPRING, TENSION	
326	3-328-353-01	SPRING, TENSION	
327	3-325-386-01	RING (A), C	
328	*3-328-450-01	LEVER (FR), SWITCH	
329	*3-335-561-01	LEVER, SW	
330	3-328-485-01	PLATE, LOCK	
331	*X-3335-516-2	CHASSIS ASSY, MECHANICAL	
332	3-328-393-01	SCREW, D SLIDER	
333	*3-328-482-01	LEVER, RELEASE, PAUSE	
339	7-624-104-04	STOP RING 2.0, TYPE -E	

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF:μF, PF:μF.

RESISTORS

All resistors are in ohms.

F : nonflammable

COILS

MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:

UA...: μA..., UPA...: μPA..., UPC...: μPC,

UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	★A-3015-540-A	MAIN BOARD ASSY
903	1-619-199-11	PC BOARD, CONNECTION FLEXIBLE
904	★1-619-208-11	PC BOARD, LED
905	★1-622-918-11	PC BOARD, CONTROL
C101	1-163-035-00	CERAMIC CHIP 0.047MF 50V
C102	1-124-766-00	ELECT 0.1MF 20% 50V
C103	1-124-438-00	ELECT 1MF 20% 50V
C104	1-124-766-00	ELECT 0.1MF 20% 50V
C105	1-124-438-00	ELECT 1MF 20% 50V
C106	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C107	1-124-462-00	ELECT 10MF 20% 6.3V
C108	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C109	1-163-034-00	CERAMIC CHIP 0.033MF 50V
C110	1-124-463-00	ELECT 0.1MF 20% 50V
C111	1-124-433-00	ELECT 100MF 20% 4V
C112	1-124-430-00	ELECT 22MF 20% 4V
C113	1-124-462-00	ELECT 10MF 20% 6.3V
C114	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V
C115	1-124-438-00	ELECT 1MF 20% 50V
C116	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C117	1-131-393-00	TANTALUM 47MF 10% 3.15V
C118	1-124-462-00	ELECT 10MF 20% 6.3V
C119	1-124-430-00	ELECT 22MF 20% 4V
C120	1-124-462-00	ELECT 10MF 20% 6.3V
C121	1-124-430-00	ELECT 22MF 20% 4V
C122	1-124-430-00	ELECT 22MF 20% 4V
C123	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C124	1-124-433-00	ELECT 100MF 20% 4V
C125	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C126	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C127	1-124-432-00	ELECT 47MF 20% 4V
C128	1-124-433-00	ELECT 100MF 20% 4V
C129	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C130	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V
C131	1-106-190-00	MYLAR 0.0056MF 5% 100V
C132	1-163-020-00	CERAMIC CHIP 0.0082MF 10% 50V
C133	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C134	1-124-433-00	ELECT 100MF 20% 4V
C135	1-124-433-00	ELECT 100MF 20% 4V
C136	1-163-016-00	CERAMIC CHIP 0.0039MF 10% 50V
C137	1-124-438-00	ELECT 1MF 20% 50V
C138	1-124-438-00	ELECT 1MF 20% 50V
C139	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V
C140	1-163-012-00	CERAMIC CHIP 0.0018MF 10% 50V
C141	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C142	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C143	1-124-438-00	ELECT 1MF 20% 50V
C144	1-124-433-00	ELECT 100MF 20% 4V
C145	1-124-438-00	ELECT 1MF 20% 50V
C146	1-163-018-00	CERAMIC CHIP 0.0056MF 10% 50V
C147	1-163-012-00	CERAMIC CHIP 0.0018MF 10% 50V
C148	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C149	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V
C150	1-124-438-00	ELECT 1MF 20% 50V
C151	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C152	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C153	1-124-438-00	ELECT 1MF 20% 50V
C154	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C155	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C156	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C157	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V
C201	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C202	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V
C203	1-163-033-00	CERAMIC CHIP 0.022MF 10% 25V
C204	1-124-432-00	ELECT 47MF 20% 4V
C205	1-124-462-00	ELECT 10MF 20% 6.3V
C206	1-124-462-00	ELECT 10MF 20% 6.3V
C207	1-124-462-00	ELECT 10MF 20% 6.3V
C208	1-161-013-00	CERAMIC 0.01MF 10% 25V
C209	1-163-016-00	CERAMIC CHIP 0.0039MF 10% 50V
C210	1-163-016-00	CERAMIC CHIP 0.0039MF 10% 50V
C211	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C212	1-124-430-00	ELECT 22MF 20% 4V
C213	1-124-438-00	ELECT 1MF 20% 50V
C214	1-124-434-00	ELECT 220MF 20% 4V
C215	1-124-462-00	ELECT 10MF 20% 6.3V
C216	1-124-434-00	ELECT 220MF 20% 4V
C217	1-124-434-00	ELECT 220MF 20% 4V
C218	1-124-430-00	ELECT 22MF 20% 4V
C219	1-163-038-00	CERAMIC CHIP 0.1MF 25V
C220	1-124-438-00	ELECT 1MF 20% 50V
C221	1-124-438-00	ELECT 1MF 20% 50V
C601	1-131-345-00	TANTALUM 0.47MF 10% 35V
C602	1-131-368-00	TANTALUM 3.3MF 10% 10V
CN101	1-507-951-11	JACK, EXTERNAL POWER (DC IN 3V)
D101	8-719-100-03	DIODE 1S2835
D102	8-719-100-03	DIODE 1S2835
D103	8-719-801-48	DIODE 1SS193
D104	8-719-911-06	DIODE 1SS106
D201	8-719-801-48	DIODE 1SS193
D202	8-719-100-03	DIODE 1S2835

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D401	8-719-901-52	DIODE SLP151B
D402	8-719-902-51	DIODE SLP251B
D403	8-719-902-51	DIODE SLP251B
D404	8-719-938-55	DIODE SLP451B
D405	8-719-938-55	DIODE SLP451B
HE901	A-3163-109-A	HOLDER (F) SUB ASSY, E
HE902	A-3163-108-A	HOLDER (R) SUB ASSY, E
HRP901	1-543-383-11	HEAD, MAGNETIC (REC/PB)
IC101	8-752-010-71	IC CX20107
IC201	1-806-020-21	IC TK10040
IC601	8-759-400-12	IC AN6612S
J101	1-507-921-00	JACK (MIC 1)
J102	1-507-921-00	JACK (MIC 2)
J103	1-507-999-31	JACK (EARPHONE)
J104	1-507-933-11	JACK (REMOTE)
M901	1-541-417-11	MOTOR
MIC901	8-814-184-00	MICROPHONE UNIT (C-1011)
PH201	8-719-913-55	DIODE GP-2S04-B
PH202	8-719-913-55	DIODE GP-2S04-B
PM901	1-454-431-21	SOLENOID, PLUNGER
Q101	8-729-100-66	TRANSISTOR 2SC1623
Q102	8-729-100-66	TRANSISTOR 2SC1623
Q103	8-729-100-66	TRANSISTOR 2SC1623
Q104	8-729-100-66	TRANSISTOR 2SC1623
Q105	8-729-100-66	TRANSISTOR 2SC1623
Q106	8-729-100-66	TRANSISTOR 2SC1623
Q107	8-729-100-66	TRANSISTOR 2SC1623
Q108	8-729-100-66	TRANSISTOR 2SC1623
Q109	8-729-100-66	TRANSISTOR 2SC1623
Q110	8-729-100-76	TRANSISTOR 2SA812
Q111	8-729-100-66	TRANSISTOR 2SC1623
Q112	8-729-100-76	TRANSISTOR 2SA812
Q201	8-729-100-76	TRANSISTOR 2SA812
Q202	8-729-100-66	TRANSISTOR 2SC1623
Q203	8-729-100-66	TRANSISTOR 2SC1623
Q204	8-729-100-66	TRANSISTOR 2SC1623
Q205	8-729-159-64	TRANSISTOR 2SD596
Q207	8-729-100-66	TRANSISTOR 2SC1623
Q208	8-729-100-76	TRANSISTOR 2SA812
Q209	8-729-100-66	TRANSISTOR 2SC1623
Q210	8-729-100-66	TRANSISTOR 2SC1623
Q211	8-729-100-66	TRANSISTOR 2SC1623
Q212	8-729-100-66	TRANSISTOR 2SC1623
Q213	8-729-100-66	TRANSISTOR 2SC1623

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q214	8-729-100-66	TRANSISTOR 2SC1623
Q401	8-729-100-66	TRANSISTOR 2SC1623
Q402	8-729-100-66	TRANSISTOR 2SC1623
Q601	8-729-113-32	TRANSISTOR 2SB733
R101	1-216-033-00	METAL CHIP 220 5% 1/10W
R102	1-216-043-00	METAL CHIP 560 5% 1/10W
R103	1-216-043-00	METAL CHIP 560 5% 1/10W
R104	1-216-063-00	METAL CHIP 3.9K 5% 1/10W
R105	1-216-063-00	METAL CHIP 3.9K 5% 1/10W
R106	1-216-109-00	METAL CHIP 330K 5% 1/10W
R107	1-249-429-11	CARBON 10K 5% 1/6W
R108	1-249-429-11	CARBON 10K 5% 1/6W
R109	1-216-105-00	METAL CHIP 220K 5% 1/10W
R110	1-216-049-00	METAL CHIP 1K 5% 1/10W
R111	1-216-073-00	METAL CHIP 10K 5% 1/10W
R112	1-216-077-00	METAL CHIP 15K 5% 1/10W
R113	1-216-043-00	METAL CHIP 560 5% 1/10W
R114	1-216-097-00	METAL CHIP 100K 5% 1/10W
R115	1-216-061-00	METAL CHIP 3.3K 5% 1/10W
R116	1-216-033-00	METAL CHIP 220 5% 1/10W
R117	1-216-073-00	METAL CHIP 10K 5% 1/10W
R118	1-216-049-00	METAL CHIP 1K 5% 1/10W
R119	1-216-097-00	METAL CHIP 100K 5% 1/10W
R120	1-216-109-00	METAL CHIP 330K 5% 1/10W
R121	1-216-063-00	METAL CHIP 3.9K 5% 1/10W
R122	1-216-073-00	METAL CHIP 10K 5% 1/10W
R123	1-216-097-00	METAL CHIP 100K 5% 1/10W
R124	1-216-306-11	METAL CHIP 3.9 5% 1/10W
R125	1-216-306-11	METAL CHIP 3.9 5% 1/10W
R126	1-216-073-00	METAL CHIP 10K 5% 1/10W
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W
R128	1-216-073-00	METAL CHIP 10K 5% 1/10W
R129	1-216-073-00	METAL CHIP 10K 5% 1/10W
R130	1-216-306-11	METAL CHIP 3.9 5% 1/10W
R131	1-216-065-00	METAL CHIP 4.7K 5% 1/10W
R132	1-216-097-00	METAL CHIP 100K 5% 1/10W
R133	1-216-073-00	METAL CHIP 10K 5% 1/10W
R134	1-216-049-00	METAL CHIP 1K 5% 1/10W
R135	1-216-073-00	METAL CHIP 10K 5% 1/10W
R136	1-216-069-00	METAL CHIP 6.8K 5% 1/10W
R137	1-216-067-00	METAL CHIP 5.6K 5% 1/10W
R138	1-216-085-00	METAL CHIP 33K 5% 1/10W
R139	1-216-023-00	METAL CHIP 82 5% 1/10W
R140	1-216-017-00	METAL CHIP 47 5% 1/10W
R141	1-216-089-00	METAL CHIP 47K 5% 1/10W
R142	1-216-089-00	METAL CHIP 47K 5% 1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R143	1-216-077-00	METAL CHIP	15K	5%	1/10W
R144	1-216-077-00	METAL CHIP	15K	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-101-00	METAL CHIP	150K	5%	1/10W
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W
R149	1-216-095-00	METAL CHIP	82K	5%	1/10W
R150	1-216-089-00	METAL CHIP	47K	5%	1/10W
R151	1-216-089-00	METAL CHIP	47K	5%	1/10W
R152	1-216-077-00	METAL CHIP	15K	5%	1/10W
R153	1-216-077-00	METAL CHIP	15K	5%	1/10W
R154	1-216-073-00	METAL CHIP	10K	5%	1/10W
R155	1-216-073-00	METAL CHIP	10K	5%	1/10W
R156	1-216-095-00	METAL CHIP	82K	5%	1/10W
R157	1-216-101-00	METAL CHIP	150K	5%	1/10W
R158	1-216-073-00	METAL CHIP	10K	5%	1/10W
R159	1-216-049-00	METAL CHIP	1K	5%	1/10W
R201	1-216-001-00	METAL CHIP	10	5%	1/10W
R202	1-216-097-00	METAL CHIP	100K	5%	1/10W
R203	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R204	1-216-049-00	METAL CHIP	1K	5%	1/10W
R205	1-216-073-00	METAL CHIP	10K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-043-00	METAL CHIP	560	5%	1/10W
R208	1-216-081-00	METAL CHIP	22K	5%	1/10W
R209	1-216-073-00	METAL CHIP	10K	5%	1/10W
R210	1-216-073-00	METAL CHIP	10K	5%	1/10W
R211	1-216-097-00	METAL CHIP	100K	5%	1/10W
R212	1-216-029-00	METAL CHIP	150	5%	1/10W
R213	1-216-097-00	METAL CHIP	100K	5%	1/10W
R214	1-216-029-00	METAL CHIP	150	5%	1/10W
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W
R216	1-216-073-00	METAL CHIP	10K	5%	1/10W
R217	1-216-103-00	METAL CHIP	180K	5%	1/10W
R218	1-216-097-00	METAL CHIP	100K	5%	1/10W
R219	1-210-825-00	SOLID	3.3M	5%	1/4W
R220	1-216-097-00	METAL CHIP	100K	5%	1/10W
R221	1-216-089-00	METAL CHIP	47K	5%	1/10W
R222	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R223	1-216-101-00	METAL CHIP	150K	5%	1/10W
R224	1-216-101-00	METAL CHIP	150K	5%	1/10W
R225	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R226	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R227	1-216-081-00	METAL CHIP	22K	5%	1/10W
R228	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R229	1-216-073-00	METAL CHIP	10K	5%	1/10W
R230	1-216-073-00	METAL CHIP	10K	5%	1/10W
R231	1-216-073-00	METAL CHIP	10K	5%	1/10W
R232	1-216-081-00	METAL CHIP	22K	5%	1/10W
R233	1-216-073-00	METAL CHIP	10K	5%	1/10W
R234	1-216-073-00	METAL CHIP	10K	5%	1/10W
R235	1-216-089-00	METAL CHIP	47K	5%	1/10W
R236	1-216-097-00	METAL CHIP	100K	5%	1/10W
R237	1-216-089-00	METAL CHIP	47K	5%	1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R238	1-216-101-00	METAL CHIP	150K	5%	1/10W
R239	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R240	1-216-089-00	METAL CHIP	47K	5%	1/10W
R241	1-216-009-00	METAL CHIP	22	5%	1/10W
R242	1-216-081-00	METAL CHIP	22K	5%	1/10W
R243	1-216-073-00	METAL CHIP	10K	5%	1/10W
R244	1-216-005-00	METAL CHIP	15	5%	1/10W
R245	1-216-049-00	METAL CHIP	1K	5%	1/10W
R401	1-216-049-00	METAL CHIP	1K	5%	1/10W
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W
R403	1-216-025-00	METAL CHIP	100	5%	1/10W
R404	1-216-306-11	METAL CHIP	3.9	5%	1/10W
R405	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R406	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R407	1-216-089-00	METAL CHIP	47K	5%	1/10W
R408	1-216-043-00	METAL CHIP	560	5%	1/10W
R409	1-216-017-00	METAL CHIP	47	5%	1/10W
R601	1-216-049-00	METAL CHIP	1K	5%	1/10W
R602	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R603	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R604	1-216-134-00	METAL CHIP	2.2	5%	1/8W
RV101	1-228-898-00	RES, VAR, CARBON 10K (VOL)			
RV201	1-230-225-00	RES, ADJ, METAL GLAZE 100K			
RV601	1-237-434-11	RES, VAR, CARBON 5K (TAPE SPEED)			
RV602	1-230-602-11	RES, ADJ, METAL GLAZE 4.7K			
S101	1-553-223-00	SWITCH, SLIDE (FWD/REV)			
S102	1-554-575-00	SWITCH, SLIDE (RECORD/PLAYBACK)			
S103	1-554-123-00	SWITCH, SLIDE (TONE)			
S104	1-570-175-11	SWITCH, LEAF (POWER)			
S201	1-554-123-00	SWITCH, SLIDE (ALARM)			
S202	1-570-175-11	SWITCH, LEAF (ERASE PROOF/B SIDE)			
S203	1-570-175-11	SWITCH, LEAF (REV)			
S401	1-553-601-00	SWITCH, SLIDE (PAUSE)			
S402	1-570-698-11	SWITCH, KEY BOARD (BATT CHECK)			
S701	1-554-123-00	SWITCH, SLIDE (PRE-END REVERSE)			
S901	1-553-226-00	SWITCH, LEAF (REV)			
SP901	1-503-322-11	SPEAKER			
T101	1-433-238-00	TRANSFORMER, BIAS OSCILLATOR			
THP601	1-807-282-11	THERMISTOR (POSITIVE)			
THP602	1-806-800-11	THERMISTOR (POSITIVE)			

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-335-586-01	SPACER
3-337-529-01	INDIVIDUAL CARTON
3-335-588-01	CUSHION
3-335-591-11	CASE, CARRYING
3-701-622-00	BAG, POLYETHYLENE
3-769-202-11	MANUAL, INSTRUCTION

